Unit 12: Inverse Trigonometric Functions

Content Area: **Mathematics**
Course(s): **PreCalc Trig H**
Time Period: **Semester 2**
Length: **1.5 weeks**
Status: **Published**

Standards - NJCCS/CCSS

CCSS.Math.Content.HSF-TF.A.4	Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
CCSS.Math.Content.HSF-TF.B.6	Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.
CCSS.Math.Content.HSF-TF.B.7	Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.

Enduring Understandings

When domains of trigonometric functions are restricted to a 1-1 portion, the inverse trigonometric function exists.

Essential Questions

Why do we restrict the domain on trig functions before we use their inverses?

Why do we restrict the domains to two of the quadrants?

How can we write an inverse trig function expression to make it more familiar?

How do we graph inverse trig functions?

Knowledge and Skills

SWBAT recall the properties of inverse functions.

SWBAT define the domain and range of inverse trigonometric functions.

SWBAT evaluate inverse trigonometric expressions.

SWBAT use TI-83 to solve inverse trigonometric equations.

SWBAT apply formulas from previous units to simplify inverse trigonometric expresssions.

SWBAT solve inverse trigonometric equations.

SWBAT graph inverse trigonometric equations.

Resources

Trigonometry

Authors: Lial, Hornsby, Schneider

Graphing Calculator

www.desmos.com

www.flipgrid.com

www.graphfree.com